

Computing Software

The Glue That Holds the Worldwide Internet Economy Together

From the browser that navigates the Internet, to the applications that harness the power of your computer, software is the glue that holds it all together. Without software, everything we do in computing, communications and networking would fall apart. Yet much of the software the world runs on you never see. There's software that talks to the internal part of a microprocessor. There's software that makes applications easier to write for computers and other digital devices. There's software that helps accelerate the adoption of emerging platforms and technologies, providing key software components developers incorporate into their applications. Intel Labs works on all these kinds of software. We also work on software and specifications that pioneer new uses of computing, communications and the Internet.

A Balanced Computing Model for the Web

A key area of our work is finding new ways for people and companies to use the Web. As the premier supplier of the building blocks of the worldwide Internet economy, we're helping companies use the Web to automate complex business processes. Some of our efforts are focused on helping XML (extensible markup language) evolve as the preferred solution for encapsulating data and communicating information for business-to-business applications. We're working for XML convergence in the industry, encouraging the establishment of common specifications and standards to make XML easier to implement.

On the personal computing side, we're focusing on ways to manage the daily bombardment by information at home and at work. We're looking at ways computing devices such as PCs and handhelds can help. These devices are the ideal administrative assistants, capable of learning everything from the kind of news that interests you to the data required

throughout an organization for your monthly budget report. The key is developing software that automatically organizes and creates relationships between the data we use every day.

A third area of focus is technologies, such as USB* and Universal Plug and Play*, that connect devices like digital cameras directly to a PC. These are beginning to contribute huge amounts of content as well. In the "always on, always connected" future, personal computing devices are going to play a huge role in helping us manage what we create, what we seek, and how we share it with others.

Helping Develop New Web Services

The Web today is essentially a visual medium. Most of the computing power is devoted to displaying information. What if it encapsulated this information in applets that performed services for you? One example is something called tentative hold protocol (THP). This technology enables you to have a relationship with several e-commerce Web

sites at once, allowing you to place a product order made at one Web site that prevents the order from going through unless an item from a completely different site is also available. Instead of having to personally visit each Web site, the application does the checking and buying for you. We're identifying new usage models like this that put the power of your computer to work on the Web.

Exploring New Uses of Computing

Today millions of computers are connected to the Web, primarily downloading content. What if instead of consuming services, these PCs were able to also produce them? Think if each PC functioned as both a client and a server in peer-to-peer relationships. This could have huge business applications, such as ad hoc networks for short-term projects that set up in minutes without servers. Businesses could also use peer-to-peer technology to use idle computer time across an organization for large-scale processing tasks. We're working on the technology required for safe, reliable peer-to-peer computing, as well as these and other possible applications of it.

Investigating More Natural Interfaces

Are input devices like the keyboard and mouse the only ways we can interface with our computers? We think not. To help enable new uses of computing, we're looking into new technologies. In speech research, we're investigating ways computers can respond not only to voice commands, but also engage

in conversations. We're also exploring input solutions employing face recognition, sensors, video and wireless technologies. A short distance wireless solution called Ultra Wide Band, for example, could handle data rates suitable for video and other bandwidth-intensive media. In the area of media and graphics, we're driving the next generation of interactive visual technology, paving the way for when powerful computers and digital devices equipped with cameras and audio capabilities are common in homes and businesses. To prepare for this future, we're working with industry groups to promote adoption of a broad range of media standards for video, digital photography and audio. We're also sponsoring industry initiatives to make computers easier to operate, connect and manage.

About Intel Labs

Intel Labs are the R&D arm of Intel. We have more than over 7,000 scientists and technologists in more than 75 labs in nearly a dozen countries worldwide. Our decentralized structure allows us to tackle a broad range of research projects. The labs are closely aligned with Intel's business units and focus on R&D for technologies and products that specifically address the needs of our customers.

Designing the Future

Find out more about Intel Labs by visiting www.intel.com/labs. The digital world of tomorrow is in our labs today.



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